



INSTITUTE OF FOOD AND
AGRICULTURAL SCIENCES
UNIVERSITY OF FLORIDA

FLORIDA
COOPERATIVE
EXTENSION SERVICE

PACKINGHOUSE NEWSLETTER

W. Wardowski, Editor
AREC
P. O. Box 1088
Lake Alfred, FL 33850
Phone (813) 956-1151

Packinghouse Newsletter No. 100
February 27, 1979

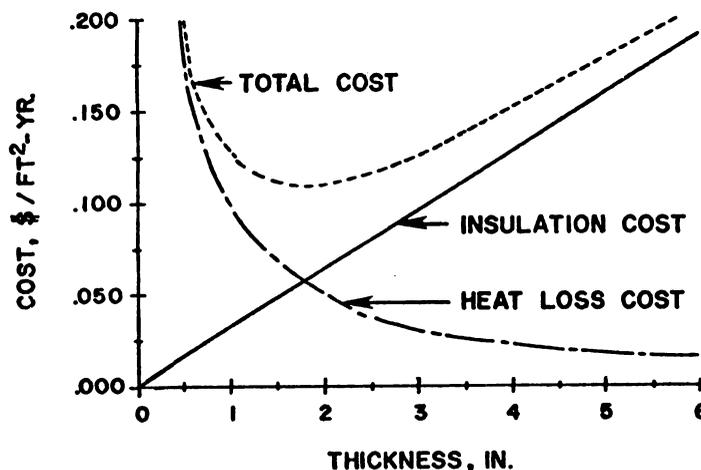
Key Word Index AREC, Lake Alfred, Australia, Energy, Insulation,

INSULATION SELECTION

One of the most straightforward ways to conserve expensive thermal energy is the use of insulation. In general, insulation will reduce energy requirements and minimize temperature fluctuations thereby enhancing control. In some cases, insulation is also used to prevent water vapor condensation.

Insulation is rated by its thermal resistance or R value. This R value varies with the thickness and type of insulation; the higher the R value the more effective the insulation. For loose fill or batt insulation, the R value is based on non-compressed material. R value is the main criterion for thermal considerations but cost, fire hazard potential, moisture degradation and expected life must also be considered. The most economic thickness can be determined by estimating the costs for heat loss and insulation as shown in the accompanying figure.

As insulation thickness increases, heat loss decreases but a point is reached where more insulation does not pay for itself with reduced energy costs. Expenses for installing insulation are not included in this. Since those costs are fixed, the most economic thickness would not change. After determining the optimum thickness and installation costs, management can then determine the return on investment for insulation expenditures. Properly used, insulation is an investment not an expense.



UTILIZATION = 1280 HRS. / YR.
TEMP. DIFF. = 70°F
STEAM COST = \$3.50/1000 LBS.
R VALUES (FIBERGLASS INSUL.)

Bill Miller
AREC
Lake Alfred

POSTHARVEST CITRUS DEVELOPMENTS IN AUSTRALIA

"The Australian citrus industry may be about to see some important changes in its postharvest handling technology". Thus began the preface to the last number of the Bulletin, which also recorded the effects of an outbreak of a benzimidazole resistant mould strain in an Australian packinghouse.

The prediction has, to some extent, come true in the intervening period. We have seen a wider adoption of volume filling with vibration, but unfortunately sections of industry are still reluctant to change from the traditional pattern packing. There has been an increase in bulk handling, greater use of consumer packs marketed in a returnable master container and attempts to mechanise and reduce the costs of packaging.

At the harvesting and handling end there would appear to have been a decline in standards, following the advent of contract and week-end picking, forced on growers by rising costs.

In the packinghouse, operators have been no less frustrated by serious outbreaks of mould resistance, since the first case reported in 1973. For researchers, in co-operation with agricultural chemical companies, this has meant testing the effectiveness of promising chemicals for mould control, and developing treatments for use in sheds for dealing with resistance.

This issue of the Bulletin attempts to highlight mould resistance, packaging and control of sour rot which can be more troublesome when mould is effectively controlled.

Citrus Packinghouse Bulletin
Number 3, November 1978, Page 3
Gosford Horticultural Postharvest
Laboratory
N.S.W., Australia
(see Available Publications, Ed.)

POSTHARVEST ACCOMPLISHMENTS AT LAKE ALFRED

It somehow seems appropriate to reflect on both the past and the future in this centennial issue of Packinghouse Newsletter. (PHNL No. 1 was in September 1965 as a letter to Florida citrus packinghouse managers). A list of the ten most notable post-harvest accomplishments at the Agricultural Research and Education Center, Lake Alfred (ex-Citrus Experiment Station) from 1932 to the present was prepared in connection with the SHARE* program to raise over \$1,000,000 for needed new facilities at Lake Alfred. That list is reproduced here for the interest of Packinghouse Newsletter readers.

*SHARE = Special Help for Agricultural Research and Education. Any individuals or organizations interested in supporting or contributing to the drive for our much needed new facilities please contact Mr. William J. Messina, Director of Program Development, SHARE, 3031 McCarty Hall, University of Florida, Gainesville, FL 32611. Phone (904) 392-1975.

1. A continuing decay control program since 1943 (36 years and still going strong!). This includes not only season-long checking of potential fungicides and development of the first commercially accepted fungicidal wax (101A), but also non-chemical methods of minimizing decay such as "fruit curing," wound healing, growth regulators, etc.
2. Fresh Florida lemons, a development that in 1958 surprised even the companies then planting "cannery lemons." This is now an annual \$3-4 million dollar trade, FOB packinghouse.
3. Modification of degreening methods that reduced ethylene levels from about 2,000 ppm in 1952 to 1-5 ppm today and raised humidity from ambient to ca. 95% RH. Almost all this work was at Lake Alfred and the increase in keeping quality of degreened fruit has been considerable.
4. Radical redesign of degreening rooms, the extreme being the big, continuously operating, instrumentally controlled rooms that now have world-wide acceptance. Virtually every recent Florida degreening room is to a Lake Alfred design.
5. In the transition from field boxes to bulk handling or to pallet boxes, every step was first worked out either at Lake Alfred or by ourselves and the USDA in cooperation.
6. First-ever Packinghouse Extension program, including an internationally respected Packinghouse Newsletter and a Packinghouse Day program that has recently been drawing out-of-state attendance.
7. Five "mysterious" fruit diseases: sloughing of red grapefruit, stem-end rind breakdown of oranges, blossom-end clearing of seedless grapefruit, zebra skin of tangerines and stylar-end breakdown of limes all diagnosed as physiological and control measures demonstrated.
8. We were ready with research results on controlling packinghouse effluents (and had negotiated an essential change in the state law) before the industry recognized that they had a serious problem ahead of them.

**HERE IS MY TAX-DEDUCTIBLE GIFT TO THE AUDITORIUM-LIBRARY BUILDING FUND
AT THE AGRICULTURAL RESEARCH AND EDUCATION CENTER, LAKE ALFRED.**

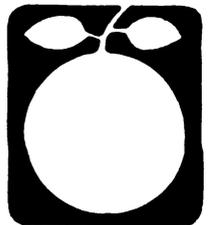
PHNL

Post Office Box 1088 / Lake Alfred, Florida 33850

For a special building fund at the Agricultural Research and Education Center, Lake Alfred, for construction of an Auditorium and Library, I/we hereby pledge the following:

Amount \$ _____
 Paid herewith \$ _____
 Balance _____

The balance will be paid:
 _____ 1979
 _____ 1980
 _____ 1981



Signature _____

Date _____

*Please make your tax deductible check payable to the Lake Alfred Building Fund—SHARE.
 Gifts of securities may be made by mailing to the University of Florida Foundation, Inc., SHARE, the unendorsed certificates via registered mail. Under separate cover mail a signed stock power for each certificate. Your signature must be guaranteed by your bank.*

PLEASE NOTE YOUR CORRECT ADDRESS ABOVE

9. Disproved the longstanding misapprehension that chilling injury of grapefruit is correlated with fruit maturity. Demonstrated a correlation with tree growth activity, with strong evidence of growth regulator control. Definite mitigation with several prestorage "curing" treatments.
10. Developed formulas and specifications for integration of the individual machinery items for maximum packingline economy and efficiency. (It is odd that anything this obvious had not been done long since).

The one most notable accomplishment not listed is that nine research workers and their assistants, on three payrolls, conduct a coherent tree-to-consumer research and Extension program. This close cooperation between agencies yields the greatest value for the taxpayers' dollars.

Bill Grierson
AREC
Lake Alfred

AVAILABLE PUBLICATIONS

Available from Dr. W. Wardowski, AREC, P. O. Box 1088, Lake Alfred, FL 33850

Packinghouse Newsletter Index for issues 1 - 100.

Available from Mr. L. E. Rippon, Gosford Horticultural Postharvest Laboratory, P. O. Box 355, Gosford, New South Wales 2250, AUSTRALIA

"Citrus Packinghouse Bulletin", Number 3, November 1978, 20 pages. See article in this Newsletter for more details.


W. Wardowski, Editor
Associate Professor-
Extension Horticulturist

This newsletter is published at a cost of \$77.70 or 6 cents per copy, to give the latest news to the packinghouse industry.